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Current Support Brief

ECONOMIC EFFECTS OF THE LATE SUMMER FLOODS IN NORTH CHINA



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W A R N I N G

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ECONOMIC EFFECTS OF THE LATE SUMMER FLOODS
IN NORTH CHINA

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Extensive and prolonged flooding in the North China Plain, caused by unusually heavy rainfall early in August, has resulted in damage to the cotton crop and to the miscellaneous grain crops of Communist China and also has resulted in a possible reduction in acreage sown to winter wheat.

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[REDACTED] As much as one-sixth of China's 1963 cotton crop and several million tons of grain may have been lost, and the forthcoming winter wheat crop may be adversely affected by a reduction in acreage. In addition, the flood caused disruptions in the transportation system, but the effects were only temporary, and there is no evidence of excessive delays in the delivery of raw materials and finished goods for industry. The loss of cotton because of the flood brings the estimated size of the 1963 crop down close to that of 1962. As a result, production of cotton textiles may be only slightly greater in 1964 than in 1963, a year in which production was only about 60 percent of the level in 1957. The emergency allocation of labor and materials for the repair of transportation and water control facilities in North China may cause temporary delays in construction of facilities in other areas.

1. Geography of the North China Plain

The North China Plain covers an area of approximately 175,000 square miles and is the largest continuous level area in Mainland China (see the map, Figure 1**). Most of the Plain is less than 200 feet above sea level and is very flat. In some localities it is impossible to drain flood water from the fields; in such cases the water remains in place until it evaporates. The rainfall during June through August accounts for 60 to 70 percent of the annual rainfall. Climatic conditions are uncertain during this period, however, and downpours or prolonged drought are frequent.

The Plain is subject to flooding by the Yellow and Huai Rivers and by those rivers north of the Yellow River that flow toward Tientsin.

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Historically the floods of the Yellow River have been the most destructive in all China because they persisted for long periods and spread over a vast area of countryside. The primary method of flood prevention in the North China Plain is diking. Thus the Yellow and Huai Rivers, where they cross the Plain, flow between dikes, and the beds of the rivers are 10 to 20 feet above the countryside. On either side of the dikes the ground slopes away from the channel.

The economic significance of the North China Plain is mainly related to agriculture. Some major transportation routes traverse the Plain, but the part subject to heavy flooding is not highly industrialized. About 20 percent of Mainland China's cultivated area is in the Plain. The major crops are winter wheat, sweet potatoes, miscellaneous grains, soybeans, cotton, and vegetables. Double cropping is practiced on about one-third of the farmland. The total sown area of the Plain normally amounts to about 33 million hectares, two-thirds of which are devoted to autumn-harvested crops.

2. Cause and Extent of the Flood

The extensive flooding in the North China Plain in 1963 was largely the result of extremely heavy and prolonged rains over large areas during the first 10 days of August, when the rainfall totaled almost 18 inches in the area of maximum precipitation (see the map, Figure 2*). This was as much as eight times the normal amount for some parts of the area. Moreover, precipitation in the area had been above average for the period from March through July 1963. The heavy rainfall early in August caused breaches in the dikes, inundating large areas. These floods were then prolonged by rains in the Yellow River watershed in Shansi and Honan Provinces from 10 through 20 September.

Although no over-all appraisal of the seriousness of the flood has been reported by the Chinese Communist government, the magnitude of the flood can be estimated by an analysis of Chinese reports [redacted] (see the map, Figure 3*). In a press release of 27 September, Peiping announced that it took almost 1 million men working for a month to bring the flood in the outskirts of Tientsin under control. A press editorial of 16 October reported that vast areas of cotton were flooded in parts of Hopeh, Honan, and Shantung Provinces. [redacted]

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* Inside back cover.

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Reports of flooding were most frequent during the first half of August in areas north of the Yellow River and in September in areas to the south. The largest number of flood reports has come from Hopeh and Shantung Provinces. Flood conditions have also been reported in Honan, Anhwei, and Kiangsu Provinces.

3. Effects of the Floods on Agriculture

It is not possible to estimate accurately the extent of damage to agriculture caused by flooding in the North China Plain in 1963. It is likely, however, that about one-fourth of the cropland in the Plain was flooded. The autumn-harvested crops were at a stage of development most vulnerable to damage by the flood.

As much as one-sixth of China's cotton crop in 1963 may have been destroyed by the flood, and about 5 percent of the soybean crop probably was lost. The loss of grain (mostly miscellaneous types) in relation to total grain production in China is not likely to exceed 2 to 3 percent. Nevertheless, this amount in absolute terms is quite important and may even approach the amount of grain being imported this year (5.5 million tons).

The impact of flood damage is expected to be felt most sharply among the rural population in the areas affected, and food shortages probably will be prevalent. Urban areas that normally receive agricultural produce from this area also will feel the effects of the flood damage.

The flood in the North China Plain also is expected to have some adverse effects on agricultural production in 1964. Poor drainage has resulted in flood water remaining on some cropland for at least 2 months --

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at least through early October -- which is interfering with the seeding of winter wheat and rape. The damage to the soils in the flooded areas will not be completely overcome by 1964.

4. Effects on Transportation and Industry

Normal transportation service within and through the North China Plain was disrupted during much of August and September because of the heavy flooding. Of the two major railroads affected by the flood -- the Peiping-Tientsin-Shanghai and Peiping-Hankow-Canton lines -- the Peiping-Hankow section of the latter probably was the hardest hit (see the map, Figure 3). Unfortunately, information pertaining to flood damage on this section is extremely limited, and there is no evidence to indicate whether or not service has been completely restored over it.

In spite of the serious interruptions in transportation, apparently the loss of service has had little impact on the economy as a whole. Modern water transport service between Yangtze River ports and North-east China was available at all times, and some rail capacity was available on alternate -- although circuitous -- railroad lines. Air transportation was used for high-priority special shipments to the flooded areas and between Peiping and the major cities south of the flooded area. There is no indication that any important civil airfields were flooded. It is probable that transportation service generally was back to normal by mid-October with the exception of motor vehicle traffic in the areas of major flooding and the possible exception of rail traffic on the Shih-chia-chuang - Han-tan section of the Peiping-Canton line.

The direct effect of the floods on industry was small because the flooded area is not highly industrialized and the few major industrial plants in the North China Plain are located well above flood levels. Deliveries of materials to industry may have been affected temporarily, but there is no evidence of serious disruptions in industrial production. Stocks of raw materials probably were available at the major plants. Although there is some evidence of shipments of strategic items by air, there is little evidence of attempts to send large quantities of materials by alternate water or land routes, a step that would have been necessary if supply lines had been seriously disrupted.

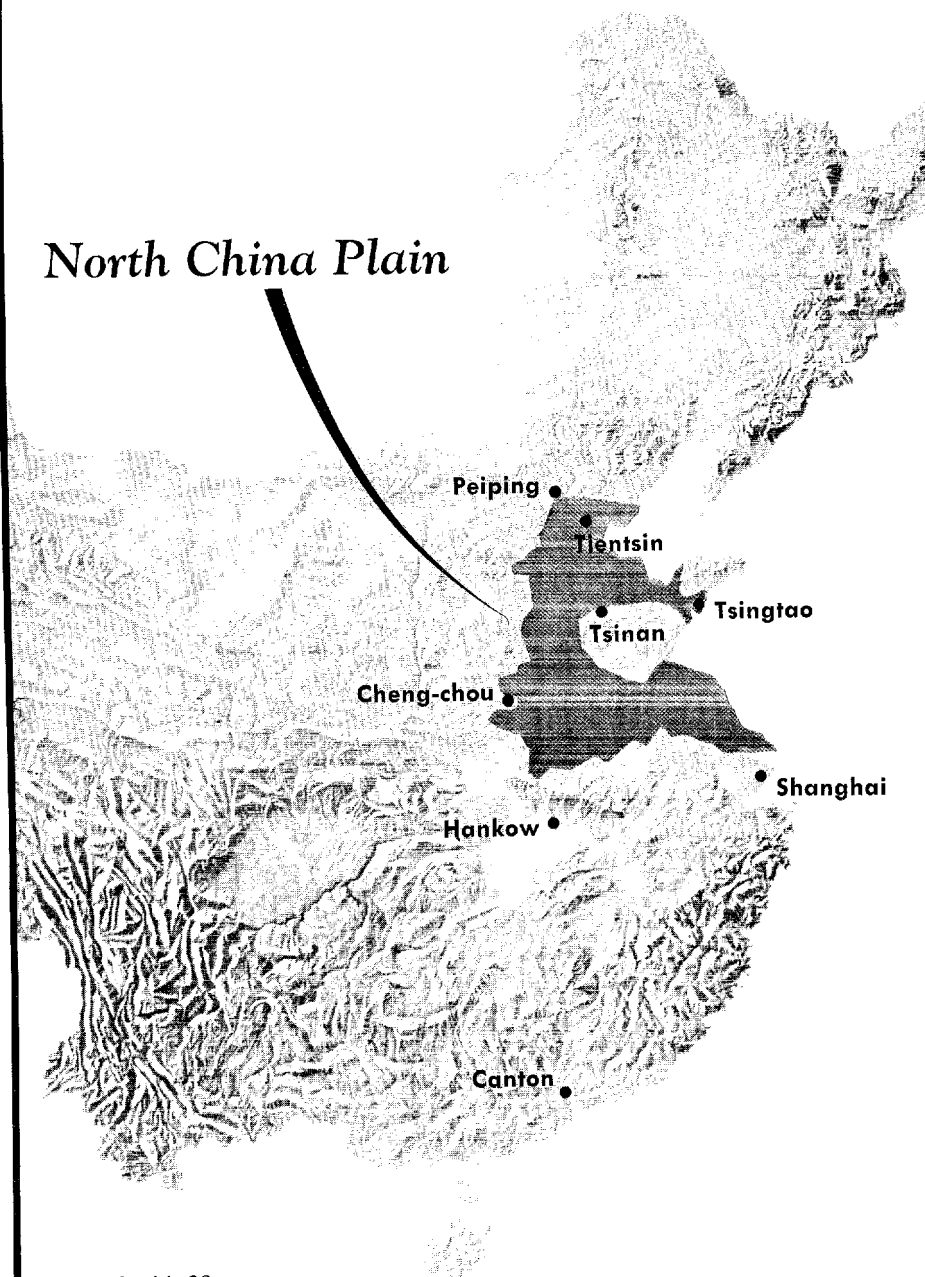
The only major industry that will be greatly affected is the cotton textile industry. The loss of cotton brings the total 1963 crop down close to the level of 1962, and, as a result, the cotton textile industry will continue to operate at less than 50 percent of capacity in 1964.

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Figure 1

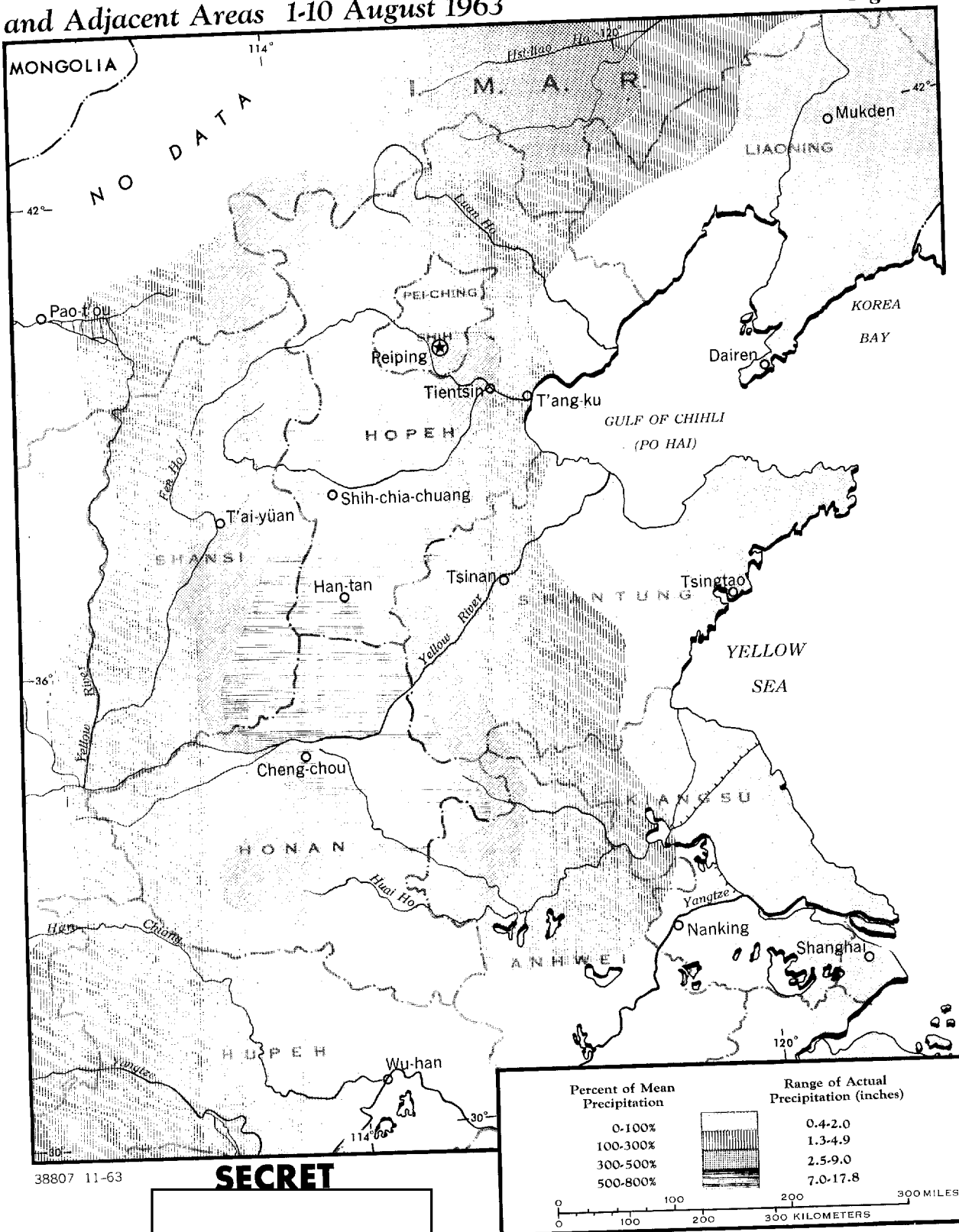


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Precipitation in the North China Plain and Adjacent Areas 1-10 August 1963

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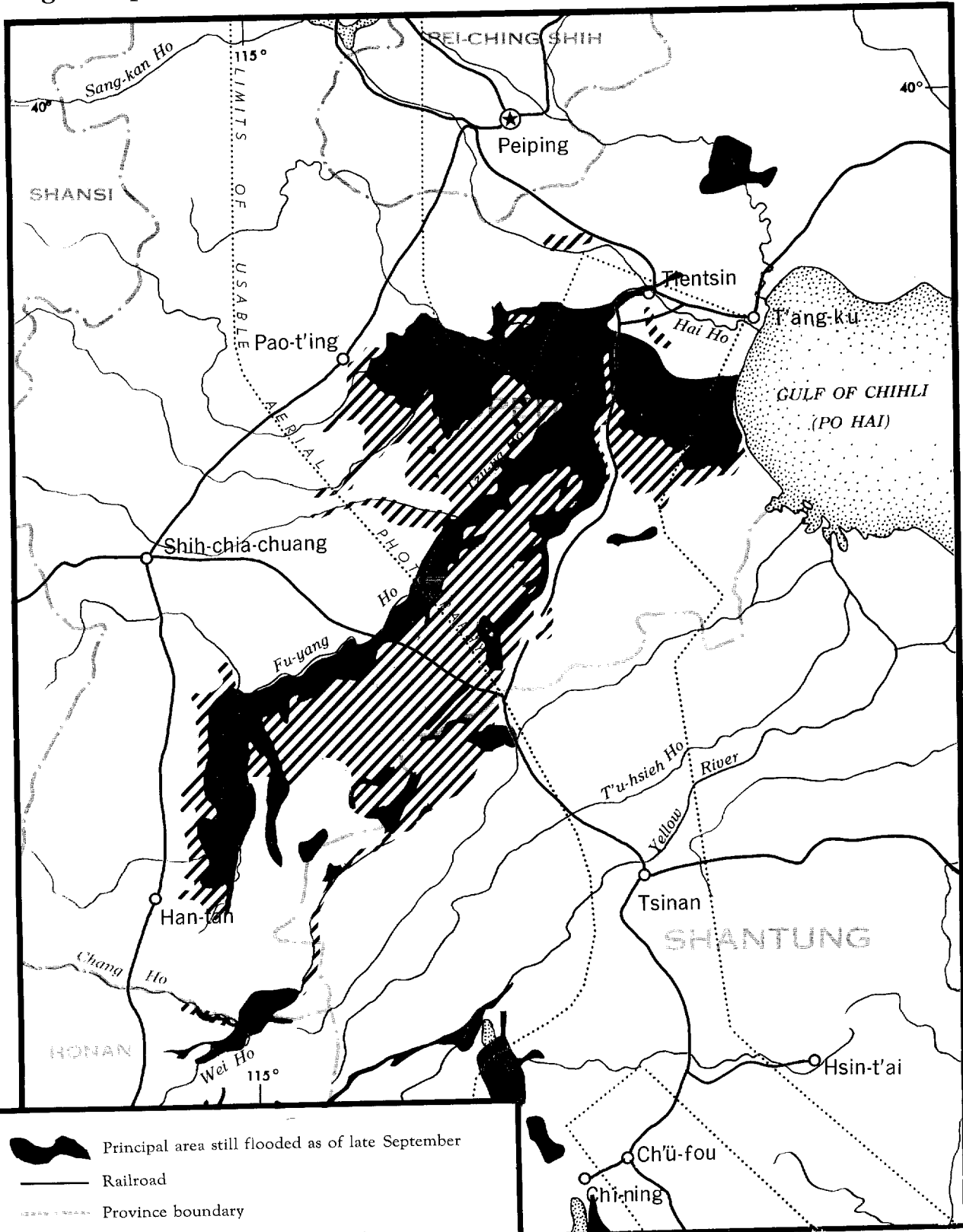
Figure 2



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Major Flood Areas in the North China Plain August-September 1963

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Figure 3



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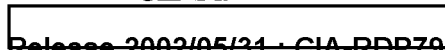
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